AMENDMENTS TO THE CLAIMS

1-8.   (Canceled)

9.   (Previously Presented)   A broadband Internet node comprising:

a classify engine interfaced with the Internet, the classify engine operable to accept

packets from the Internet and determine classification information for each

packet, wherein the classify engine is operable to detect a SYN packet associated

with a new TCP connection;

a modify/process engine interfaced with the classify engine, the modify/process engine

having plural ports, each port having an associated function; and

a controller interfaced with the classify engine and the modify/process engine, the

controller programming the classify engine to route each packet to a

predetermined port of the modify/process engine based on the classification

information of the packet;

wherein the controller programs the classify engine with a dataflow program that

determines classification information for the packets and detects the host/port

quadruple of the new TCP connection and creates a new queue for the new TCP

connection.

10.   (Previously Presented)   The node of Claim 9 wherein the classify engine is
further operable to detect packets associated with an FTP data stream and the controller is further
operable to program the classify engine with a new dataflow program that classifies the FTP data
stream according to the host/port quadruple of the FTP connection.

11.   (Previously Presented)   The node of Claim 9 wherein the classify engine is
further operable to monitor DHCP requests and responses to extract MAC and IP address
mapping, and the controller is further operable to program the classify engine with rules to
control traffic with IP address information.

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12. (Previously Presented)   The node of Claim 9 wherein the classify engine is further operable to monitor DNS requests and responses to associate traffic with an IP address and the controller is further operable to program the classify engine with rules to control traffic with IP address information.

13-21. (Canceled)

22. (Previously Presented)   A method for routing Internet packets, the method comprising:

classifying the packets into one or more packet flows according to classification rules;

routing each packet flow to a predetermined port of a processor, each port having an associated function, so that the packets flow through the processor as a data path;

programming the classification rules and functions through a control path that looks across packet flows of the data path;

detecting a new packet type; and

performing reflective programming on a dataflow program to classify the new packet type;

wherein the new packet type comprises a new TCP connection, detecting comprises detecting a SYN packet associated with the new TCP connection, and performing reflective programming comprises programming a dataflow program that classifies the host/port quadruple of the new TCP connection.

23. (Withdrawn)   A method for providing a service on a packet- based network, the method comprising:

monitoring network traffic with a processor to detect control protocol information;

extracting control protocol information from the network traffic;

using reflective programming to create a new dataflow program for monitoring packets associated with at least some of the extracted control protocol information; and

monitoring the network traffic with the new dataflow program.

24. (Withdrawn)   The method of Claim 23 wherein the processor comprises a network processor.

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25. (Withdrawn) The method of Claim 23 wherein monitoring network traffic further comprises:

    monitoring network traffic with a processor running a dataflow program to detect control protocol information.

26. (Withdrawn) The method of Claim 23 wherein monitoring network traffic comprises:

    monitoring network traffic with a processor running a rules-based program to detect control protocol information.

27. (Withdrawn) The method of Claim 23 wherein the control protocol information comprises host and port information from network traffic associated with an FTP data.

28. (Withdrawn) The method of Claim 27 wherein the new dataflow program comprises a host/port quadruple associated with the FTP data.

29. (Withdrawn) The method of Claim 27 wherein the new dataflow program associates the FTP data with a class of service.

30. (Withdrawn) The method of Claim 23 wherein the control protocol information comprises DHCP requests and responses from network traffic associated with a dynamically assigned IP address.

31. (Withdrawn) The method of Claim 30 wherein the new dataflow program comprises rules based on IP addresses extracted from MAC IP mapping.

32. (Withdrawn) The method of Claim 23 wherein the control protocol information comprises DNS requests and responses from network traffic associated with mapping of an Internet host name and an IP address.

33. (Withdrawn) The method of Claim 32 wherein the new dataflow program processes traffic associated with the Internet host name.

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34.   (Withdrawn)   The method of Claim 23 wherein the control protocol information comprises a lookup request to a first server for the IP address and port number of a second server having predetermined information.

35.   (Withdrawn)   The method of Claim 34 wherein the new dataflow program comprises instructions to create another dataflow program.